23. (new) An isolated polynucleotide comprising:

(a) a nucleotide sequence encoding a polypeptide having cellulose synthase activity, wherein the polypeptide has an amino acid sequence of at least 80% sequence identity, based on the Clustal V method of alignment, when compared to SEQ ID NO:30, or

(b) a complement of the nucleotide sequence, wherein the complement and the nucleotide sequence consist of the same number of nucleotides and are 100% complementary.

24. (new) The polynucleotide of Claim 23, wherein the amino acid sequence of the polypeptide has at least 85% sequence identity, based on the Clustal V method of alignment, when compared to SEQ ID NO:30.

25. (new) The polynucleotide of Claim 23, wherein the amino acid sequence of the polypeptide has at least 90% sequence identity, based on the Clustal V method of alignment, when compared to SEQ ID NO:30.

G3

26. (new) The polynucleotide of Claim 23, wherein the amino acid sequence of the polypeptide has at least 95% sequence identity, based on the Clustal V method of alignment, when compared to SEQ ID NO:30.

27. (new) The polynucleotide of Claim 23, wherein the amino acid sequence of the polypeptide comprises SEQ ID NO:30.

28. (new) The polynucleotide of Claim 23 wherein the nucleotide sequence comprises SEQ ID NO:29.

29. (new) A vector comprising the polynucleotide of Claim 23.

30. (new) A recombinant DNA construct comprising the polynucleotide of Claim 23 operably linked to at least one regulatory sequence.

31. (new) A method for transforming a cell, comprising transforming a cell with the polynucleotide of Claim 23.

32. (new) A cell comprising the recombinant DNA construct of Claim 30.

33. (new) A method for producing a plant comprising transforming a plant cell with the polynucleotide of Claim 23 and regenerating a plant from the transformed plant cell.

34. (new) A plant comprising the recombinant DNA construct of Claim 30.

35. (new) A seed comprising the recombinant DNA construct of Claim 30.